

# Ex. 14

**U.S. Patent No. 7,290,164 Infringement Chart**

**Title:** Method of reverting to a recovery configuration in response to device faults

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**Abstract:** A method is disclosed for reverting to a recovery configuration in response to device faults. A change to the configuration is received. The change may be in the form of configuration instructions that comprise input from a user identifying changes to be made to the configuration information reflecting the configuration of cards or interface devices in the device. A user, an IT administrator or the like can provide configuration instructions. The device may change its current configuration to a new configuration based upon the configuration instructions. If a loss of connectivity resulting from the configuration change is detected, the device will recover from the loss of connectivity by reverting to a recovery configuration.

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<p>[1.0] A method of reverting to a recovery configuration in response to faults of a network device, the method comprising the computer-implemented steps of:</p>	<p>To the extent the preamble is limiting, Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, perform a method of reverting to a recovery configuration in response to faults of a network device. The Arista 7048 series, running EOS version 4.7.7 or 4.13.5F, is an exemplary model for demonstrating Arista's infringement of this patent.</p> <p><i>See, e.g.</i>, Gary A. Donahue, Arista Warrior (2013) (App. M, Ex. 17) at p. 301 ("When an Arista switch boots for the first time, ZTP is enabled. The switch sees that there is no <i>startup-config</i>, so it configures all interfaces with the no switchport command, then sends out DHCP queries on any Ethernet and Management interfaces.")</p> <p><i>See, e.g.</i>, Arista Technical Bulletin, <i>Arista Zero Touch Provisioning</i> (App. M, Ex. 10) at p. 2 ("Under normal conditions Arista EOS is responsible for loading the 'startup-config' file and populating its contents into the system database. When a 'startup-config' is not present, the switch starts the ZTP process to auto-configure the switch. ZTP is designed to provide the intelligence needed to allow the switch to boot with minimal disruption to the network.")</p> <p><i>See, e.g.</i>, Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 337:</p>

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	<p>The switch displays a CONFIG_DOWNLOAD_SUCCESS message after it successfully downloads a <i>startup-config</i> file, then continues the reload process as described in <a href="#">Section 6.4.1</a>.</p> <pre> =====  Successful download -----  Apr 15 21:36:46 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet10, Ethernet13, Ethernet14, Ethernet17, Ethernet18, Ethernet21, Ethernet22, Ethernet23, Ethernet24, Ethernet7, Ethernet8, Ethernet9, Management1, Management2 ] </pre> <p>See, e.g., output of Zero Touch Provisioning on EOS v. 4.7.7:</p> <pre> The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.  localhost login: Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-WORKER WARMSTART: ProcMgr worker warm start. (PID=1495) Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-PROCESS_STARTED: 'Pmbus' starting with PID=1893 (PPID=1495) -- execing ' /usr/bin/PmbusPowerSupply' Jul 14 18:55:51 localhost SandCell: %SAND-6-INIT_SUCCEEDED: Initialization of FixedSystem switch asics succeeded. Jul 14 18:55:53 localhost Stp: %SPANTREE-6-ROOTCHANGE: Root changed for instance MST0: new root interface is (none), new root bridge mac address is 00:1c:73:10:38:cc (this switch) Jul 14 18:56:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 1) Jul 14 18:57:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 2) Jul 14 18:59:08 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:59:24 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet1 [ Ip Address: 192.168.100.3/24 ; Nameserver: 192.168.100.1; Gateway: 0.0.0.0; Boot File: http://Elkhorn/Arista/Arista-simple ] Jul 14 18:59:29 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://Elkhorn/Ar ista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded config script from http://Elkhor n/Arista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT: Executing the downloaded config script Stopping sshd: Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT_SUCCESS: Successfully executed the downloaded config s cript Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-RELOAD: Rebooting the system [ OK ] watchdog is not running SysRq : Remount R/O Restarting system </pre> <p>See, e.g., output of “show running-config” command on EOS v. 4.7.7:</p>

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	<pre> Jul 14 19:42:12 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 1) localhost#show run   more ! device: localhost (DCS-7048T-A, EOS-4.7.7) ! ! boot system flash:/EOS-4.7.7.swi ! no aaa root ! logging console informational ! logging level AAA errors logging level ACL errors logging level AGENT errors logging level BGP errors logging level CLEAR errors logging level ENVMON errors logging level ETH errors logging level EXTENSION errors logging level FOCALPOINT errors logging level FRU errors logging level FWK errors logging level HARDWARE errors logging level IGMP Snooping errors logging level INTF errors logging level LACP errors localhost# </pre>
[1.1] receiving configuration instructions;	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, perform receiving configuration instructions.</p> <p><i>See, e.g.,</i> ZTP Setup Guide (10/29/13) (App. M, Ex. 22) (“ZTP is done in three steps:</p> <ol style="list-style-type: none"> <li>1. Create script and startup-configuration files for each ZTP capable switch</li> <li>2. Edit the dhcpd.conf file on a dhcp server to add the ZTP information</li> <li>3. Power-on the switch (if new) or delete the startup-config (if not)”)</li> </ol> <p><i>See, e.g.,</i> ZTP Setup Guide (10/29/13) (App. M, Ex. 22) (“If an existing switch is being upgraded delete the startup-config on each switch and enter reload now, (do not save any changes if prompted). The switch will reboot and download its new startup-config and EOS.swi image using ZTP.”)</p> <p><i>See, e.g.,</i> output of Zero Touch Provisioning “enable” command on EOS v. 4.7.7:</p>

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	<pre> localhost(config)#sh version Arista DCS-7048T-A-R Hardware version:    01.01 Serial number:       JSH11420240 System MAC address:  001c.7310.38cc  Software image version: 4.7.7 Architecture:         i386 Internal build version: 4.7.7-470791.EOS477release Internal build ID:     91635ce6-88e9-4d07-abe0-3412ea936472  Uptime:               2 minutes Total memory:          4039008 kB Free memory:           2831364 kB  localhost(config)#zerotouch enable % Configuration ignored: ZeroTouch can not be enabled interactively. To enable Z eroTouch, delete startup-config and reload the switch. localhost(config)# </pre> <p>See, e.g., output of Zero Touch Provisioning “enable” command on EOS v. 4.13.5F:</p>

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	<pre>localhost(config)#sh version Arista DCS-7048T-A-R Hardware version:    01.01 Serial number:       JSH11420240 System MAC address:  001c.7310.38cc  Software image version: 4.13.5F Architecture:         i386 Internal build version: 4.13.5F-1730164.4135F.1 Internal build ID:     9514fae3-2601-45f0-9b13-e229fc3e2719  Uptime:               4 minutes Total memory:          3990496 kB Free memory:           1386192 kB  localhost(config)#zerotouch enable % Configuration ignored: ZeroTouch cannot be enabled interactively. To enable ZeroTouch, delete startup-config and reload the switch. localhost(config)#</pre> <p>See, e.g., Arista-Config-Copy-MIB Definitions (2013) available at <a href="http://www.arista.com/assets/data/docs/MIBS/ARISTA-CONFIG-COPY-MIB.txt">http://www.arista.com/assets/data/docs/MIBS/ARISTA-CONFIG-COPY-MIB.txt</a> (last visited 10/29/2014) (App. M, Ex. 6) (“This MIB is for copying a source URI to a destination URI. A URI specifies the location of a local file, network file, running-config or startup-config. The resources specified by the URIs are copied from/to Arista devices. Currently supported URI schemes include: file, flash, extension, system, ftp, http, https and tftp.”)</p> <p>See, e.g., Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 116 (“The switch provides a Linux Bash shell for accessing the underlying Linux operating system and extensions.”)</p> <p>See, e.g., Gary A. Donahue, Arista Warrior (2013) (App. M, Ex. 17) at p. 57 (“Perhaps even more impressively, Arista allows the user to access the underlying Linux operating system and to even write Python scripts that can control the switch.”)</p>

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	<p><i>See, e.g.</i>, Gary A. Donahue, Arista Warrior (2013) (App. M, Ex. 17) at p. 58 (“Arista offers APIs for programmers . . . and even hosts a website where customers can share their ideas or scripts with other users. This website, entitled EOS Central, can be found at <a href="http://eos.aristanetworks.com/">http://eos.aristanetworks.com/</a> (registration is required).”)</p> <p><i>See, e.g.</i>, output from sample test script “arista.txt” run on EOS v. 4.7.7:</p> <pre data-bbox="585 423 1299 647">[admin@localhost mnt]\$ cat usb1/arista.txt #!/usr/bin/Cli -p2 enable config write erase reload [admin@localhost mnt]\$</pre>
[1.2] changing a current configuration to a new configuration based upon the configuration instructions;	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, perform changing a current configuration to a new configuration based upon the configuration instructions.</p> <p><i>See, e.g.</i>, output from executing sample test script “arista.txt” on EOS v. 4.7.7:</p> <pre data-bbox="487 878 1186 1265">[admin@localhost mnt]\$ cat usb1/arista.txt #!/usr/bin/Cli -p2 enable config write erase reload [admin@localhost mnt]\$ usb1/arista.txt Proceed with reload? [confirm]y  Broadcast messagStopping sshd: [ OK ] SysRq : Remount R/O Restarting system</pre>
[1.3] detecting a loss of connectivity between the device and a network	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, perform detecting a loss of connectivity between the device and a network resulting from the configuration change.</p>

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resulting from the configuration change; and	<p><i>See, e.g.</i>, output of Zero Touch Provisioning on EOS v. 4.7.7:</p> <pre data-bbox="491 315 1381 532">No startup-config was found.  The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.</pre>
[1.4] recovering from the loss of connectivity by reverting to a recovery configuration, wherein the recovery configuration is stored in a persistent storage of the device in association with manufacturing the device, wherein the recovering step further comprises:	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, perform recovering from the loss of connectivity by reverting to a recovery configuration, wherein the recovery configuration is stored in a persistent storage of the device in association with manufacturing the device.</p> <p><i>See, e.g.</i>, Gary A. Donahue, Arista Warrior (2013) (App. M, Ex. 17) at p. 301 (“When an Arista switch boots for the first time, ZTP is enabled. The switch sees that there is no <i>startup-config</i>, so it configures all interfaces with the no switchport command, then sends out DHCP queries on any Ethernet and Management interfaces.”)</p> <p><i>See, e.g.</i>, Arista Technical Bulletin, <i>Arista Zero Touch Provisioning</i> (App. M, Ex. 10) at p. 2 (“Under normal conditions Arista EOS is responsible for loading the ‘startup-config’ file and populating its contents into the system database. When a ‘startup-config’ is not present, the switch starts the ZTP process to auto-configure the switch. ZTP is designed to provide the intelligence needed to allow the switch to boot with minimal disruption to the network.”)</p> <p><i>See, e.g.</i>, Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 337:</p>



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	<p>The switch displays a CONFIG_DOWNLOAD_SUCCESS message after it successfully downloads a <i>startup-config</i> file, then continues the reload process as described in <a href="#">Section 6.4.1</a>.</p> <pre> =====  Successful download -----  Apr 15 21:36:46 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet10, Ethernet13, Ethernet14, Ethernet17, Ethernet18, Ethernet21, Ethernet22, Ethernet23, Ethernet24, Ethernet7, Ethernet8, Ethernet9, Management1, Management2 ] </pre> <p>See, e.g., output of Zero Touch Provisioning on EOS v. 4.7.7:</p> <pre> The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.  localhost login: Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-WORKER_WARMSTART: ProcMgr worker warm start. (PID=1495) Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-PROCESS_STARTED: 'Pmbus' starting with PID=1893 (PPID=1495) -- execing ' /usr/bin/PmbusPowerSupply' Jul 14 18:55:51 localhost SandCell: %SAND-6-INIT_SUCCEEDED: Initialization of FixedSystem switch asics succeeded. Jul 14 18:55:53 localhost Stp: %SPANTREE-6-ROOTCHANGE: Root changed for instance MST0: new root interface is (none), new root bridge mac address is 00:1c:73:10:38:cc (this switch) Jul 14 18:56:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 1) Jul 14 18:57:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 2) Jul 14 18:59:08 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:59:24 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet1 [ Ip Address: 192.168.100.3/24 ; Nameserver: 192.168.100.1; Gateway: 0.0.0.0; Boot File: http://Elkhorn/Arista/Arista-simple ] Jul 14 18:59:29 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://Elkhorn/Ar ista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded config script from http://Elkhorn n/Arista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT: Executing the downloaded config script Stopping sshd: Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT_SUCCESS: Successfully executed the downloaded config s cript Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-RELOAD: Rebooting the system [ OK ] watchdog is not running SysRq : Remount R/O Restarting system </pre>

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	<p>See, e.g., output of “show running-config” command on EOS v. 4.7.7:</p> <pre> Jul 14 19:42:12 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 1) localhost#show run   more ! device: localhost (DCS-7048T-A, EOS-4.7.7) ! ! boot system flash:/EOS-4.7.7.swi ! no aaa root ! logging console informational ! logging level AAA errors logging level ACL errors logging level AGENT errors logging level BGP errors logging level CLEAR errors logging level ENVMON errors logging level ETH errors logging level EXTENSION errors logging level FOCALPOINT errors logging level FRU errors logging level FWK errors logging level HARDWARE errors logging level IGMPSNOOPING errors logging level INTF errors logging level LACP errors localhost# </pre>
[1.5] retrieving a recovery configuration;	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, perform retrieving a recovery configuration.</p> <p>See, e.g., Gary A. Donahue, <i>Arista Warrior</i> (2013) (App. M, Ex. 17) at p. 301 (“When an Arista switch boots for the first time, ZTP is enabled. The switch sees that there is no <i>startup-config</i>, so it configures all interfaces with the no switchport command, then sends out DHCP queries on any Ethernet and Management interfaces.”)</p> <p>See, e.g., Arista Technical Bulletin, <i>Arista Zero Touch Provisioning</i> (App. M, Ex. 10) at p. 2 (“Under normal conditions Arista EOS is responsible for loading the ‘startup-config’ file and populating its contents into the system database. When a ‘startup-config’ is not present, the switch starts the ZTP process to auto-configure the switch. ZTP is designed to provide the intelligence needed to allow the switch to boot with minimal</p>

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	<p>disruption to the network.”)</p> <p><i>See, e.g.</i>, Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 337:</p> <p style="padding-left: 40px;">The switch displays a CONFIG_DOWNLOAD_SUCCESS message after it successfully downloads a <i>startup-config</i> file, then continues the reload process as described in <a href="#">Section 6.4.1</a>.</p> <pre style="padding-left: 80px;">===== Successful download -----  Apr 15 21:36:46 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet10, Ethernet13, Ethernet14, Ethernet17, Ethernet18, Ethernet21, Ethernet22, Ethernet23, Ethernet24, Ethernet7, Ethernet8, Ethernet9, Management1, Management2 ]</pre> <p><i>See, e.g.</i>, output of Zero Touch Provisioning on EOS v. 4.7.7:</p>

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	<pre> The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.  localhost login: Jul 14 18:55:38 localhost ProcMgr-worker: %PROCMgr-6-WORKER_WARMSTART: ProcMgr worker warm start. (PID=1495) Jul 14 18:55:38 localhost ProcMgr-worker: %PROCMgr-6-PROCESS_STARTED: 'Pmbus' starting with PID=1893 (PPID=1495) -- execing '/usr/bin/PmbusPowerSupply' Jul 14 18:55:51 localhost SandCell: %SAND-6-INIT_SUCCEEDED: Initialization of FixedSystem switch asics succeeded. Jul 14 18:55:53 localhost Stp: %SPANTREE-6-ROOTCHANGE: Root changed for instance MST0: new root interface is (none), new root bridge mac address is 00:1c:73:10:38:cc (this switch) Jul 14 18:56:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 1) Jul 14 18:57:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 2) Jul 14 18:59:08 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:59:24 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet1 [ Ip Address: 192.168.100.3/24 ; Nameserver: 192.168.100.1; Gateway: 0.0.0.0; Boot File: http://Elkhorn/Arista/Arista-simple ] Jul 14 18:59:29 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://Elkhorn/Ar ista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded config script from http://Elkhorn n/Arista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT: Executing the downloaded config script Stopping sshd: Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT_SUCCESS: Successfully executed the downloaded config s cript Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-RELOAD: Rebooting the system [ OK ] watchdog is not running SysRq : Remount R/O Restarting system </pre> <p><i>See, e.g., output of “show running-config” command on EOS v. 4.7.7:</i></p>

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[1.6] making the recovery configuration the current configuration; and	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, perform making the recovery configuration the current configuration.</p> <p><i>See, e.g.,</i> Gary A. Donahue, Arista Warrior (2013) (App. M, Ex. 17) at p. 301 (“When an Arista switch boots for the first time, ZTP is enabled. The switch sees that there is no <i>startup-config</i>, so it configures all interfaces with the no switchport command, then sends out DHCP queries on any Ethernet and Management interfaces.”)</p> <p><i>See, e.g.,</i> Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 337:</p>



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	<p>The switch displays a CONFIG_DOWNLOAD_SUCCESS message after it successfully downloads a <i>startup-config</i> file, then continues the reload process as described in <a href="#">Section 6.4.1</a>.</p> <pre> =====  Successful download -----  Apr 15 21:36:46 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet10, Ethernet13, Ethernet14, Ethernet17, Ethernet18, Ethernet21, Ethernet22, Ethernet23, Ethernet24, Ethernet7, Ethernet8, Ethernet9, Management1, Management2 ] </pre> <p>See, e.g., output of Zero Touch Provisioning on EOS v. 4.7.7:</p> <pre> The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.  localhost login: Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-WORKER_WARMSTART: ProcMgr worker warm start. (PID=1495) Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-PROCESS_STARTED: 'Pmbus' starting with PID=1893 (PPID=1495) -- execing ' /usr/bin/PmbusPowerSupply' Jul 14 18:55:51 localhost SandCell: %SAND-6-INIT_SUCCEEDED: Initialization of FixedSystem switch asics succeeded. Jul 14 18:55:53 localhost Stp: %SPANTREE-6-ROOTCHANGE: Root changed for instance MST0: new root interface is (none), new root bridge mac address is 00:1c:73:10:38:cc (this switch) Jul 14 18:56:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 1) Jul 14 18:57:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 2) Jul 14 18:59:08 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:59:24 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet1 [ Ip Address: 192.168.100.3/24 ; Nameserver: 192.168.100.1; Gateway: 0.0.0.0; Boot File: http://Elkhorn/Arista/Arista-simple ] Jul 14 18:59:29 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://Elkhorn/Ar ista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded config script from http://Elkhorn n/Arista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT: Executing the downloaded config script Stopping sshd: Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT_SUCCESS: Successfully executed the downloaded config s cript Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-RELOAD: Rebooting the system [ OK ] watchdog is not running SysRq : Remount R/O Restarting system </pre>

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	<p><i>See, e.g.,</i> output of “show running-config” command on EOS v. 4.7.7:</p> <pre> Jul 14 19:42:12 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 1) localhost#show run   more ! device: localhost (DCS-7048T-A, EOS-4.7.7) ! ! boot system flash:/EOS-4.7.7.swi ! no aaa root ! logging console informational ! logging level AAA errors logging level ACL errors logging level AGENT errors logging level BGP errors logging level CLEAR errors logging level ENVMON errors logging level ETH errors logging level EXTENSION errors logging level FOCALPOINT errors logging level FRU errors logging level FWK errors logging level HARDWARE errors logging level IGMP Snooping errors logging level INTF errors logging level LACP errors localhost# </pre>
[1.7] establishing connectivity to a configuration manager using the recovery configuration.	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, perform establishing connectivity to a configuration manager using the recovery configuration.</p> <p><i>See, e.g.,</i> Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 337:</p>

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	<pre> Successful download -----  Apr 15 21:36:46 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet10, Ethernet13, Ethernet14, Ethernet17, Ethernet18, Ethernet21, Ethernet22, Ethernet23, Ethernet24, Ethernet7, Ethernet8, Ethernet9, Management1, Management2 ] Apr 15 21:36:56 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet24 [ Mtu: 1500; Ip Address: 10.10.0.4/16; Nameserver: 10.10.0.1; Domain: aristanetworks.com; Gateway: 10.10.0.1; Boot File: http://10.10.0.2:8080/tmp/172.17.11.196-startup-config.1 ] Apr 15 21:37:01 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://10.10.0.2:8080/tmp/172.17.11.196-startup-config.1 Apr 15 21:37:02 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded startup-config from http://10.10.0.2:8080/tmp/172.17.11.196-startup-config.1 </pre> <p>See, e.g., Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 336-37:</p> <p><b>“6.4.4.1 Configuring the Network for ZTP</b></p> <p>A switch performs the following after booting in ZTP mode:</p> <ul style="list-style-type: none"> <li>• Configures each physical interface to no switchport mode.</li> <li>• Sends a DHCP query packet on all Ethernet and management interfaces.</li> </ul> <p>After the switch receives a DHCP offer, it responds with a DHCP request for Option 66 (TFTP server name), Option 67 (bootfile name), and dynamic network configuration settings. When the switch receives a valid DHCP response, it configures the network settings, then fetches the file from the location listed in Option 67. If Option 67 returns a network URL (http:// or ftp://), the switch obtains the file from the network. If Option 67 returns a file name, the switch retrieves the file from the TFTP server listed in Option 66.</p> <p>The Option 67 file can be a <i>startup-config</i> file or a boot script. The switch distinguishes between a <i>startup-config</i> file and a boot script by examining the first line in the file:</p>



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	<ul style="list-style-type: none"> <li>• The first line of a boot file must consist of the #! characters followed by the interpreter path. The switch executes the code in the script, then reboots. The boot script may fetch an SWI image or perform required customization tasks.</li> </ul> <p>The following boot file fetches an SWI image and stores a startup configuration file to flash.</p> <pre>#!/usr/bin/Cli -p2 copy http://company.com/startup-config flash:startup-config copy http://company.com/EOS-2.swi flash:EOS-2.swi config boot system flash:EOS-2.swi</pre> <ul style="list-style-type: none"> <li>• The switch identifies any other file as a startup-config file. The switch copies the startup-config file into flash as mnt/flash/startup-config, then reboots.</li> </ul> <p>The switch uses its system MAC address as the DHCP client identifier and Arista as the Vendor Class Identifier (Option 60). When the switch receives an http URL through Option 67, it sends the following http headers in the GET request:</p> <pre>X-Arista-SystemMAC: X-Arista-HardwareVersion: X-Arista-SKU: X-Arista-Serial: X-Arista-Architecture:"</pre> <p><i>See, e.g., Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 602 (“<b>Switched Port Configuration</b> The no switchport command places the configuration mode interface in routed port mode. Routed ports behave as Layer 3 interfaces. They do not bridge packets and are not VLAN members. An IP address can be assigned to a routed port for the direct routing of packets to and from the interface.”)</i></p>

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	<p><i>See, e.g., output of Zero Touch Provisioning on EOS v. 4.7.7:</i></p> <pre> The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.  localhost login: Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-WORKER_WARMSTART: ProcMgr worker warm start. (PID=1495) Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-PROCESS_STARTED: 'Pmbus' starting with PID=1893 (PPID=1495) -- execing '/usr/bin/PmbusPowerSupply' Jul 14 18:55:51 localhost SandCell: %SAND-6-INIT_SUCCEEDED: Initialization of FixedSystem switch asics succeeded. Jul 14 18:55:53 localhost Stp: %SPANTREE-6-ROOTCHANGE: Root changed for instance MST0: new root interface is (none), new root bridge mac address is 00:1c:73:10:38:cc (this switch) Jul 14 18:56:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 1) Jul 14 18:57:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 2) Jul 14 18:59:08 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:59:24 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet1 [ Ip Address: 192.168.100.3/24 ; Nameserver: 192.168.100.1; Gateway: 0.0.0.0; Boot File: http://Elkhorn/Arista/Arista-simple ] Jul 14 18:59:29 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://Elkhorn/Ar ista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded config script from http://Elkhor n/Arista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT: Executing the downloaded config script Stopping sshd: Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT_SUCCESS: Successfully executed the downloaded config s cript Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-RELOAD: Rebooting the system [ OK ] watchdog is not running SysRq : Remount R/O Restarting system </pre> <p><i>See, e.g., output of “show running-config” command on EOS v. 4.7.7:</i></p>

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	<pre> AristaUpdate login:  AristaUpdate login: admin AristaUpdate&gt;enable AristaUpdate#show run ! device: AristaUpdate (DCS-7048T-A, EOS-4.7.7) ! ! boot system flash:/EOS-4.7.7.swi ! no aaa root ! hostname AristaUpdate ! spanning-tree mode mstp ! interface Ethernet1 ! </pre>
<p>[18.0] A computer-readable medium carrying one or more sequences of instructions for reverting to a recovery configuration in response to faults of a network device, which instructions, when executed by one or more processors, cause the</p>	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, include a computer-readable medium carrying one or more sequences of instructions for reverting to a recovery configuration in response to faults of a network device, which instructions, when executed by one or more processors, cause the one or more processors to carry out the following steps. The Arista 7048 series, running EOS version 4.7.7 or 4.13.5F, is an exemplary model for demonstrating Arista's infringement of this patent.</p> <p><i>See, e.g., Arista White Paper, Arista 7500 Switch Architecture</i> (March 2014) (App. M, Ex. 13) at p. 3 ("Arista EOS®, the control-plane software for all Arista switches executes on multi-core x86 CPUs and in the case of the Supervisor-E, on a 4 core Intel Sandy Bridge Xeon.")</p> <p><i>See, e.g., Arista White Paper, Arista 7250X &amp; 7300 Switch Architecture</i> (December 2013) (App. M, Ex. 12) at p. 7 ("Arista EOS®, the control-plane software for all Arista switches executes on multi-core x86 CPUs with multiple gigabytes of DRAM.")</p>

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<p>one or more processors to carry out the steps of:</p>	<p><i>See, e.g.</i>, Arista White Paper, <i>Arista 7050X Switch Architecture</i> (October 2013) (App. M, Ex. 11) at p. 5 (“Arista EOS®, the control-plane software for all Arista switches executes on multi-core x86 CPUs with multiple gigabytes of DRAM.”)</p> <p><i>See, e.g.</i>, Arista Technical Bulletin, <i>Arista Zero Touch Provisioning</i> (App. M, Ex. 10) at p. 1 (“What is Arista ZTP? Simply stated, ZTP is used to configure a switch without user intervention. Built to fully leverage the power of Arista’s Extensible Operating System (EOS), ZTP provides a flexible solution, provisioning the network infrastructure without requiring a network engineer present at install. A true ‘must-have’ feature to contain costs and increase reliability when deploying scalable clouds and data centers.”)</p> <p><i>See, e.g., id.</i> at 2 (“Under normal conditions Arista EOS is responsible for loading the ‘startup-config’ file and populating its contents into the system database. When a ‘startup-config’ is not present, the switch starts the ZTP process to auto-configure the switch. ZTP is designed to provide the intelligence needed to allow the switch to boot with minimal disruption to the network.”)</p> <p><i>See, e.g.</i>, Arista Automation available at <a href="http://www.arista.com/en/products/eos/automation">http://www.arista.com/en/products/eos/automation</a> (ZTP Tab) (last visited 10/29/2014) (App. M, Ex. 5) (“Zero Touch Provisioning - Network Automation for Cloud Data Centers</p> <ul style="list-style-type: none"> <li>• As simple as rack, connect and power-on</li> <li>• Standards based, no need to implement proprietary platforms</li> <li>• Advanced scripting capabilities</li> <li>• Maintain compliance and network integrity</li> <li>• Fully automate network and server provisioning”)</li> </ul> <p><i>See, e.g.</i>, ZTP Setup Guide (10/29/13) (App. M, Ex. 22) (“ZTP is a simple hands-off approach to both initial set up and upgrading an existing network. ZTP does not require entering into the switch cli, speeds up and simplifies deployment, reduces the risk of human error, and can adapt to many deployment scenarios. It offers scripting extensibility for complex networks and flexible provisioning using standard tools. Additionally the switch can be ZTP booted using a variety of identifiers, such as its MAC address, serial number, or lldp neighbors.”)</p>

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	<p><i>See, e.g.</i>, ZTP Setup Guide (10/29/13) (App. M, Ex. 22) (“ZTP is a key part of network deployment at large scale and is suited to a wide array of network topologies. It can be extended to support the use of serial number, lldp neighbor or other unique identifiers. With the use of scripting tools the configuration file creation can be fully automated, leading to the elimination of repetitive tasks in network switch deployment and upgrading. ZTP is a powerful new feature for the modern data center.”)</p>
[18.1] receiving configuration instructions;	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, perform receiving configuration instructions.</p> <p><i>See, e.g.</i>, ZTP Setup Guide (10/29/13) (App. M, Ex. 22) (“ZTP is done in three steps:</p> <ol style="list-style-type: none"> <li>1. Create script and startup-configuration files for each ZTP capable switch</li> <li>2. Edit the dhcpd.conf file on a dhcp server to add the ZTP information</li> <li>3. Power-on the switch (if new) or delete the startup-config (if not)”)</li> </ol> <p><i>See, e.g.</i>, ZTP Setup Guide (10/29/13) (App. M, Ex. 22) (“If an existing switch is being upgraded delete the startup-config on each switch and enter reload now, (do not save any changes if prompted). The switch will reboot and download its new startup-config and EOS.swi image using ZTP.”)</p> <p><i>See, e.g.</i>, output of Zero Touch Provisioning “enable” command on EOS v. 4.7.7:</p>

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	<pre> localhost(config)#sh version Arista DCS-7048T-A-R Hardware version:    01.01 Serial number:       JSH11420240 System MAC address:  001c.7310.38cc  Software image version: 4.7.7 Architecture:         i386 Internal build version: 4.7.7-470791.EOS477release Internal build ID:     91635ce6-88e9-4d07-abe0-3412ea936472  Uptime:               2 minutes Total memory:          4039008 kB Free memory:           2831364 kB  localhost(config)#zerotouch enable % Configuration ignored: ZeroTouch can not be enabled interactively. To enable Z eroTouch, delete startup-config and reload the switch. localhost(config)# </pre> <p>See, e.g., output of Zero Touch Provisioning “enable” command on EOS v. 4.13.5F:</p>

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	<pre>localhost(config)#sh version Arista DCS-7048T-A-R Hardware version:    01.01 Serial number:       JSH11420240 System MAC address:  001c.7310.38cc  Software image version: 4.13.5F Architecture:         i386 Internal build version: 4.13.5F-1730164.4135F.1 Internal build ID:     9514fae3-2601-45f0-9b13-e229fc3e2719  Uptime:              4 minutes Total memory:         3990496 kB Free memory:          1386192 kB  localhost(config)#zerotouch enable % Configuration ignored: ZeroTouch cannot be enabled interactively. To enable ZeroTouch, delete startup-config and reload the switch. localhost(config)#</pre> <p>See, e.g., Arista-Config-Copy-MIB Definitions (2013) available at <a href="http://www.arista.com/assets/data/docs/MIBS/ARISTA-CONFIG-COPY-MIB.txt">http://www.arista.com/assets/data/docs/MIBS/ARISTA-CONFIG-COPY-MIB.txt</a> (last visited 10/29/2014) (App. M, Ex. 6) (“This MIB is for copying a source URI to a destination URI. A URI specifies the location of a local file, network file, running-config or startup-config. The resources specified by the URIs are copied from/to Arista devices. Currently supported URI schemes include: file, flash, extension, system, ftp, http, https and tftp.”)</p> <p>See, e.g., Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 116 (“The switch provides a Linux Bash shell for accessing the underlying Linux operating system and extensions.”)</p> <p>See, e.g., Gary A. Donahue, Arista Warrior (2013) (App. M, Ex. 17) at p. 57 (“Perhaps even more impressively, Arista allows the user to access the underlying Linux operating system and to even write Python scripts that can control the switch.”)</p>

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	<p><i>See, e.g.</i>, Gary A. Donahue, Arista Warrior (2013) (App. M, Ex. 17) at p. 58 (“Arista offers APIs for programmers . . . and even hosts a website where customers can share their ideas or scripts with other users. This website, entitled EOS Central, can be found at <a href="http://eos.aristanetworks.com/">http://eos.aristanetworks.com/</a> (registration is required).”)</p> <p><i>See, e.g.</i>, output from sample test script “arista.txt” run on EOS v. 4.7.7:</p> <pre>[admin@localhost mnt]\$ cat usb1/arista.txt #!/usr/bin/Cli -p2 enable config write erase reload [admin@localhost mnt]\$</pre>
[18.2] changing a current configuration to a new configuration based upon the configuration instructions	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, include changing a current configuration to a new configuration based upon the configuration instructions.</p> <p><i>See, e.g.</i>, output from executing sample test script “arista.txt” on EOS v. 4.7.7:</p> <pre>[admin@localhost mnt]\$ cat usb1/arista.txt #!/usr/bin/Cli -p2 enable config write erase reload [admin@localhost mnt]\$ usb1/arista.txt Proceed with reload? [confirm]y  Broadcast messageStopping sshd: [ OK ] SysRq : Remount R/O Restarting system</pre>
[18.3] detecting a loss of connectivity between the device	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, include detecting a loss</p>



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and a network resulting from the configuration change;	<p>of connectivity between the device and a network resulting from the configuration change.</p> <p><i>See, e.g.</i>, output of Zero Touch Provisioning on EOS v. 4.7.7:</p> <pre data-bbox="585 383 1478 605">No startup-config was found.  The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.</pre>
[18.4] recovering from the loss of connectivity by reverting to a recovery configuration wherein the recovery configuration is stored in a persistent storage of the device in association with manufacturing the device, wherein the recovering step further comprises:	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, include recovering from the loss of connectivity by reverting to a recovery configuration wherein the recovery configuration is stored in a persistent storage of the device in association with manufacturing the device.</p> <p><i>See, e.g.</i>, Gary A. Donahue, <i>Arista Warrior</i> (2013) (App. M, Ex. 17) at p. 301 (“When an Arista switch boots for the first time, ZTP is enabled. The switch sees that there is no <i>startup-config</i>, so it configures all interfaces with the no switchport command, then sends out DHCP queries on any Ethernet and Management interfaces.”)</p> <p><i>See, e.g.</i>, Arista Technical Bulletin, <i>Arista Zero Touch Provisioning</i> (App. M, Ex. 10) at p. 2 (“Under normal conditions Arista EOS is responsible for loading the ‘startup-config’ file and populating its contents into the system database. When a ‘startup-config’ is not present, the switch starts the ZTP process to auto-configure the switch. ZTP is designed to provide the intelligence needed to allow the switch to boot with minimal disruption to the network.”)</p> <p><i>See, e.g.</i>, Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 337:</p>

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	<p>The switch displays a CONFIG_DOWNLOAD_SUCCESS message after it successfully downloads a <i>startup-config</i> file, then continues the reload process as described in <a href="#">Section 6.4.1</a>.</p> <pre> =====  Successful download -----  Apr 15 21:36:46 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet10, Ethernet13, Ethernet14, Ethernet17, Ethernet18, Ethernet21, Ethernet22, Ethernet23, Ethernet24, Ethernet7, Ethernet8, Ethernet9, Management1, Management2 ] </pre> <p>See, e.g., output of Zero Touch Provisioning on EOS v. 4.7.7:</p> <pre> The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.  localhost login: Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-WORKER_WARMSTART: ProcMgr worker warm start. (PID=1495) Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-PROCESS_STARTED: 'Pmbus' starting with PID=1893 (PPID=1495) -- execing ' /usr/bin/PmbusPowerSupply' Jul 14 18:55:51 localhost SandCell: %SAND-6-INIT_SUCCEEDED: Initialization of FixedSystem switch asics succeeded. Jul 14 18:55:53 localhost Stp: %SPANTREE-6-ROOTCHANGE: Root changed for instance MST0: new root interface is (none), new root bridge mac address is 00:1c:73:10:38:cc (this switch) Jul 14 18:56:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 1) Jul 14 18:57:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 2) Jul 14 18:59:08 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:59:24 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet1 [ Ip Address: 192.168.100.3/24 ; Nameserver: 192.168.100.1; Gateway: 0.0.0.0; Boot File: http://Elkhorn/Arista/Arista-simple ] Jul 14 18:59:29 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://Elkhorn/Ar ista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded config script from http://Elkhorn n/Arista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT: Executing the downloaded config script Stopping sshd: Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT_SUCCESS: Successfully executed the downloaded config s cript Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-RELOAD: Rebooting the system [ OK ] watchdog is not running SysRq : Remount R/O Restarting system </pre>

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	<p>See, e.g., output of “show running-config” command on EOS v. 4.7.7:</p> <pre> Jul 14 19:42:12 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 1) localhost#show run   more ! device: localhost (DCS-7048T-A, EOS-4.7.7) ! ! boot system flash:/EOS-4.7.7.swi ! no aaa root ! logging console informational ! logging level AAA errors logging level ACL errors logging level AGENT errors logging level BGP errors logging level CLEAR errors logging level ENVMON errors logging level ETH errors logging level EXTENSION errors logging level FOCALPOINT errors logging level FRU errors logging level FWK errors logging level HARDWARE errors logging level IGMPSNOOPING errors logging level INTF errors logging level LACP errors localhost# </pre>
[18.5] retrieving the recovery configuration;	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, include retrieving the recovery configuration.</p> <p>See, e.g., Gary A. Donahue, <i>Arista Warrior</i> (2013) (App. M, Ex. 17) at p. 301 (“When an Arista switch boots for the first time, ZTP is enabled. The switch sees that there is no <i>startup-config</i>, so it configures all interfaces with the no switchport command, then sends out DHCP queries on any Ethernet and Management interfaces.”)</p> <p>See, e.g., Arista Technical Bulletin, <i>Arista Zero Touch Provisioning</i> (App. M, Ex. 10) at p. 2 (“Under normal conditions Arista EOS is responsible for loading the ‘startup-config’ file and populating its contents into the system database. When a ‘startup-config’ is not present, the switch starts the ZTP process to auto-configure the switch. ZTP is designed to provide the intelligence needed to allow the switch to boot with minimal</p>

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	<p>disruption to the network.”)</p> <p><i>See, e.g.</i>, Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 337:</p> <p style="padding-left: 40px;">The switch displays a CONFIG_DOWNLOAD_SUCCESS message after it successfully downloads a <i>startup-config</i> file, then continues the reload process as described in <a href="#">Section 6.4.1</a>.</p> <pre style="padding-left: 80px;">===== Successful download -----  Apr 15 21:36:46 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet10, Ethernet13, Ethernet14, Ethernet17, Ethernet18, Ethernet21, Ethernet22, Ethernet23, Ethernet24, Ethernet7, Ethernet8, Ethernet9, Management1, Management2 ]</pre> <p><i>See, e.g.</i>, output of Zero Touch Provisioning on EOS v. 4.7.7:</p>

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	<pre> The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.  localhost login: Jul 14 18:55:38 localhost ProcMgr-worker: %PROCMgr-6-WORKER_WARMSTART: ProcMgr worker warm start. (PID=1495) Jul 14 18:55:38 localhost ProcMgr-worker: %PROCMgr-6-PROCESS_STARTED: 'Pmbus' starting with PID=1893 (PPID=1495) -- execing '/usr/bin/PmbusPowerSupply' Jul 14 18:55:51 localhost SandCell: %SAND-6-INIT_SUCCEEDED: Initialization of FixedSystem switch asics succeeded. Jul 14 18:55:53 localhost Stp: %SPANTREE-6-ROOTCHANGE: Root changed for instance MST0: new root interface is (none), new root bridge mac address is 00:1c:73:10:38:cc (this switch) Jul 14 18:56:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY FAIL: Failed to get a valid DHCP response Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 1) Jul 14 18:57:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY FAIL: Failed to get a valid DHCP response Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 2) Jul 14 18:59:08 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:59:24 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet1 [ Ip Address: 192.168.100.3/24 ; Nameserver: 192.168.100.1; Gateway: 0.0.0.0; Boot File: http://Elkhorn/Arista/Arista-simple ] Jul 14 18:59:29 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://Elkhorn/Ar ista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded config script from http://Elkhorn n/Arista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT: Executing the downloaded config script Stopping sshd: Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT_SUCCESS: Successfully executed the downloaded config s cript Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-RELOAD: Rebooting the system [ OK ] watchdog is not running SysRq : Remount R/O Restarting system </pre> <p><i>See, e.g., output of “show running-config” command on EOS v. 4.7.7:</i></p>

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	<pre> Jul 14 19:42:12 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 1) localhost#show run   more ! device: localhost (DCS-7048T-A, EOS-4.7.7) ! ! boot system flash:/EOS-4.7.7.swi ! no aaa root ! logging console informational ! logging level AAA errors logging level ACL errors logging level AGENT errors logging level BGP errors logging level CLEAR errors logging level ENVMON errors logging level ETH errors logging level EXTENSION errors logging level FOCALPOINT errors logging level FRU errors logging level FWK errors logging level HARDWARE errors logging level IGMP Snooping errors logging level INTF errors logging level LACP errors localhost# </pre>
[18.6] making the recovery configuration the current configuration; and	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, include making the recovery configuration the current configuration.</p> <p><i>See, e.g.,</i> Gary A. Donahue, Arista Warrior (2013) (App. M, Ex. 17) at p. 301 (“When an Arista switch boots for the first time, ZTP is enabled. The switch sees that there is no <i>startup-config</i>, so it configures all interfaces with the no switchport command, then sends out DHCP queries on any Ethernet and Management interfaces.”)</p> <p><i>See, e.g.,</i> Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 337:</p>



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	<p>The switch displays a CONFIG_DOWNLOAD_SUCCESS message after it successfully downloads a <i>startup-config</i> file, then continues the reload process as described in <a href="#">Section 6.4.1</a>.</p> <pre> =====  Successful download -----  Apr 15 21:36:46 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet10, Ethernet13, Ethernet14, Ethernet17, Ethernet18, Ethernet21, Ethernet22, Ethernet23, Ethernet24, Ethernet7, Ethernet8, Ethernet9, Management1, Management2 ] </pre> <p>See, e.g., output of Zero Touch Provisioning on EOS v. 4.7.7:</p> <pre> The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.  localhost login: Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-WORKER_WARMSTART: ProcMgr worker warm start. (PID=1495) Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-PROCESS_STARTED: 'Pmbus' starting with PID=1893 (PPID=1495) -- execing ' /usr/bin/PmbusPowerSupply' Jul 14 18:55:51 localhost SandCell: %SAND-6-INIT_SUCCEEDED: Initialization of FixedSystem switch asics succeeded. Jul 14 18:55:53 localhost Stp: %SPANTREE-6-ROOTCHANGE: Root changed for instance MST0: new root interface is (none), new root bridge mac address is 00:1c:73:10:38:cc (this switch) Jul 14 18:56:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 1) Jul 14 18:57:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 2) Jul 14 18:59:08 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:59:24 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet1 [ Ip Address: 192.168.100.3/24 ; Nameserver: 192.168.100.1; Gateway: 0.0.0.0; Boot File: http://Elkhorn/Arista/Arista-simple ] Jul 14 18:59:29 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://Elkhorn/Ar ista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded config script from http://Elkhorn n/Arista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT: Executing the downloaded config script Stopping sshd: Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT_SUCCESS: Successfully executed the downloaded config s cript Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-RELOAD: Rebooting the system [ OK ] watchdog is not running SysRq : Remount R/O Restarting system </pre>

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	<p><i>See, e.g.,</i> output of “show running-config” command on EOS v. 4.7.7:</p> <pre> Jul 14 19:42:12 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the begining (attempt 1) localhost#show run   more ! device: localhost (DCS-7048T-A, EOS-4.7.7) ! ! boot system flash:/EOS-4.7.7.swi ! no aaa root ! logging console informational ! logging level AAA errors logging level ACL errors logging level AGENT errors logging level BGP errors logging level CLEAR errors logging level ENVMON errors logging level ETH errors logging level EXTENSION errors logging level FOCALPOINT errors logging level FRU errors logging level FWK errors logging level HARDWARE errors logging level IGMP Snooping errors logging level INTF errors logging level LACP errors localhost# </pre>
[18.7] establishing connectivity to a configuration manager using the recovery configuration.	<p>The Arista switches, including at least the 7010, 7048, 7050, 7050X, 7150, 7250X, 7280E, 7300, 7300X, and 7500E series models, and/or Arista EOS, including at least versions 4.7.7 or 4.13.5F, include establishing connectivity to a configuration manager using the recovery configuration.</p> <p><i>See, e.g.,</i> Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 337:</p>



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	<pre> Successful download -----  Apr 15 21:36:46 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet10, Ethernet13, Ethernet14, Ethernet17, Ethernet18, Ethernet21, Ethernet22, Ethernet23, Ethernet24, Ethernet7, Ethernet8, Ethernet9, Management1, Management2 ] Apr 15 21:36:56 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet24 [ Mtu: 1500; Ip Address: 10.10.0.4/16; Nameserver: 10.10.0.1; Domain: aristanetworks.com; Gateway: 10.10.0.1; Boot File: http://10.10.0.2:8080/tmp/172.17.11.196-startup-config.1 ] Apr 15 21:37:01 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://10.10.0.2:8080/tmp/172.17.11.196-startup-config.1 Apr 15 21:37:02 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded startup-config from http://10.10.0.2:8080/tmp/172.17.11.196-startup-config.1 </pre> <p>See, e.g., Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 336-37:</p> <p><b>“6.4.4.1 Configuring the Network for ZTP</b></p> <p>A switch performs the following after booting in ZTP mode:</p> <ul style="list-style-type: none"> <li>• Configures each physical interface to no switchport mode.</li> <li>• Sends a DHCP query packet on all Ethernet and management interfaces.</li> </ul> <p>After the switch receives a DHCP offer, it responds with a DHCP request for Option 66 (TFTP server name), Option 67 (bootfile name), and dynamic network configuration settings. When the switch receives a valid DHCP response, it configures the network settings, then fetches the file from the location listed in Option 67. If Option 67 returns a network URL (http:// or ftp://), the switch obtains the file from the network. If Option 67 returns a file name, the switch retrieves the file from the TFTP server listed in Option 66.</p> <p>The Option 67 file can be a <i>startup-config</i> file or a boot script. The switch distinguishes between a <i>startup-config</i> file and a boot script by examining the first line in the file:</p>

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	<ul style="list-style-type: none"> <li>• The first line of a boot file must consist of the #! characters followed by the interpreter path. The switch executes the code in the script, then reboots. The boot script may fetch an SWI image or perform required customization tasks.</li> </ul> <p>The following boot file fetches an SWI image and stores a startup configuration file to flash.</p> <pre>#!/usr/bin/Cli -p2 copy http://company.com/startup-config flash:startup-config copy http://company.com/EOS-2.swi flash:EOS-2.swi config boot system flash:EOS-2.swi</pre> <ul style="list-style-type: none"> <li>• The switch identifies any other file as a startup-config file. The switch copies the startup-config file into flash as mnt/flash/startup-config, then reboots.</li> </ul> <p>The switch uses its system MAC address as the DHCP client identifier and Arista as the Vendor Class Identifier (Option 60). When the switch receives an http URL through Option 67, it sends the following http headers in the GET request:</p> <pre>X-Arista-SystemMAC: X-Arista-HardwareVersion: X-Arista-SKU: X-Arista-Serial: X-Arista-Architecture:"</pre> <p><i>See, e.g., Arista Configuration Guide v. 4.13.5F (2/4/14) (App. M, Ex. 25) at p. 602 (“<b>Switched Port Configuration</b> The no switchport command places the configuration mode interface in routed port mode. Routed ports behave as Layer 3 interfaces. They do not bridge packets and are not VLAN members. An IP address can be assigned to a routed port for the direct routing of packets to and from the interface.”)</i></p>

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	<p><i>See, e.g., output of Zero Touch Provisioning on EOS v. 4.7.7:</i></p> <pre> The device is in Zero Touch Provisioning mode and is attempting to download the startup-config from a remote system. The device will not be fully functional until either a valid startup-config is downloaded from a remote system or Zero Touch Provisioning is cancelled. To cancel Zero Touch Provisioning, login as admin and type 'zerotouch cancel' at the CLI.  localhost login: Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-WORKER_WARMSTART: ProcMgr worker warm start. (PID=1495) Jul 14 18:55:38 localhost ProcMgr-worker: %PROCGR-6-PROCESS_STARTED: 'Pmbus' starting with PID=1893 (PPID=1495) -- execing '/usr/bin/PmbusPowerSupply' Jul 14 18:55:51 localhost SandCell: %SAND-6-INIT_SUCCEEDED: Initialization of FixedSystem switch asics succeeded. Jul 14 18:55:53 localhost Stp: %SPANTREE-6-ROOTCHANGE: Root changed for instance MST0: new root interface is (none), new root bridge mac address is 00:1c:73:10:38:cc (this switch) Jul 14 18:56:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:57:07 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 1) Jul 14 18:57:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-DHCP_QUERY_FAIL: Failed to get a valid DHCP response Jul 14 18:58:37 localhost ZeroTouch: %ZTP-5-RETRY: Retrying Zero Touch Provisioning from the beginning (attempt 2) Jul 14 18:59:08 localhost ZeroTouch: %ZTP-5-DHCP_QUERY: Sending DHCP request on [ Ethernet1 ] Jul 14 18:59:24 localhost ZeroTouch: %ZTP-5-DHCP_SUCCESS: DHCP response received on Ethernet1 [ Ip Address: 192.168.100.3/24 ; Nameserver: 192.168.100.1; Gateway: 0.0.0.0; Boot File: http://Elkhorn/Arista/Arista-simple ] Jul 14 18:59:29 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD: Attempting to download the startup-config from http://Elkhorn/Ar ista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-CONFIG_DOWNLOAD_SUCCESS: Successfully downloaded config script from http://Elkhor n/Arista/Arista-simple Jul 14 18:59:30 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT: Executing the downloaded config script Stopping sshd: Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-EXEC_SCRIPT_SUCCESS: Successfully executed the downloaded config s cript Jul 14 18:59:47 localhost ZeroTouch: %ZTP-5-RELOAD: Rebooting the system [ OK ] watchdog is not running SysRq : Remount R/O Restarting system </pre> <p><i>See, e.g., output of “show running-config” command on EOS v. 4.7.7:</i></p>

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	<pre>AristaUpdate login: AristaUpdate login: admin AristaUpdate&gt;enable AristaUpdate#show run ! device: AristaUpdate (DCS-7048T-A, EOS-4.7.7) ! ! boot system flash:/EOS-4.7.7.swi ! no aaa root ! hostname AristaUpdate ! spanning-tree mode mstp ! interface Ethernet1 !</pre>